

AMENDED CLAIMS

1. A method for protection of submerged marine surfaces from bio-fouling without external electrical power comprising:
spraying the surface to be protected with a solvent free, zinc or zinc based alloy coating produced by a thermal spray process.
2. The method according to claim 1 wherein the coating is free of tributyltin.
3. The method according to claim 1 wherein said spraying is in the absence of a volatile organic compounds (VOC).
4. The method according to claim 1 wherein the surface is a metal member selected from the group consisting of carbon steel, aluminum, stainless steel, brass, copper, copper-nickel, monel, lead and bronze.
5. The method according to claim 1 wherein the coating is applied directly to the surface of the structure without any insulating layers.
6. The method according to claim 1 wherein the surface is fiberglass, plastic, composites, concrete, or wood.
7. The method for protecting of a submerged metal marine surface without external electrical power comprised of washing the surface to be protected with water to remove any soluble salts and biomass, blasting the metal surface to white metal, selecting a metal wire containing zinc compatible with said surface, carrying out a thermal spray process to apply a zinc or zinc based coating to said surface to thereby achieve protection against bio-fouling.
8. The method according to claim 4 wherein said thermal spray process is by electric arc, combustion wire or combustion powder.

*Article 19***AMENDED CLAIMS**

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original claims 1, 5, and 7 amended; remaining claims unchanged (1 page)]

1. A method for protection of submerged marine surfaces from bio-fouling without external electrical power comprising:

spraying the surface to be protected with a solvent free, zinc or zinc based alloy coating produced by a thermal spray process.
2. The method according to claim 1 wherein the coating is free of tributyltin.
3. The method according to claim 1 wherein said spraying is in the absence of a volatile organic compounds (VOC).
4. The method according to claim 1 wherein the surface is a metal member selected from the group consisting of carbon steel, aluminum, stainless steel, brass, copper, copper-nickel, monel, lead and bronze.
5. The method according to claim 1 wherein the coating is applied directly to the surface of the structure without any insulating layers.
6. The method according to claim 1 wherein the surface is fiberglass, plastic, composites, concrete, or wood.
7. The method for protecting of a submerged metal marine surface without external electrical power comprised of washing the surface to be protected with water to remove any soluble salts and biomass, blasting the metal surface to white metal, selecting a metal wire containing zinc compatible with said surface, carrying out a thermal spray process to apply a zinc or zinc based coating to said surface to thereby achieve protection against bio-fouling.
8. The method according to claim 4 wherein said thermal spray process is by electric arc, combustion wire, or combustion powder.

9. The method according to claim 7 further comprising applying multiple layers by thermal spray to obtain a uniform coverage by the zinc or zinc based alloy on the said surface.

10. The method according to claim 4 further comprising optionally adding a
5 sealer on top of the thermal spray coating.

11. The method according to claim 1 wherein a thermal spray metallized coating is deposited and composed of 50-100% zinc.

12. The method according to claim 9 wherein zinc metal coating additionally contains a member selected from the group consisting of copper, carbon, tin, nickel,
10 aluminum, magnesium and mixtures thereof.

13. A method for cathodically protecting surfaces of marine structures which are to be placed underwater comprising thermally spraying said surfaces with a solvent free, zinc or zinc based alloy coating.

14. The method according to claim 12 wherein said marine structure is the hull of
15 a ship, ship hardware, buoys, locks, dam, off-shore oil rigs, piers, wharfs bulk heads, pipelines and sea water intakes.

15. A marine structure which when in use is submerged in water having been coated by the method according to claim 1.

16. A marine structure has been coated according to the method of claim 13.

20 17. A propeller having been coated by the method of claim 1.

18. A submerged marine surface coated with the method according to claim 1.